



## The seven attributes of the academic surgeon: Critical aspects of the archetype and contributions to the surgical community



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### ABSTRACT

**Background:** “Academic surgeon” describes a member of a medical school department of surgery, but this term does not fully define the important role of such physician-scientists in advancing surgical science through translational research and innovation.

**Methods:** The curriculum vitae and self-descriptive vignettes of the records of achievement of seven surgeons possessing documented records of academic leadership, innovation, and dissemination of knowledge were reviewed.

**Results:** Out analysis yielded seven attributes of the archetypal academic surgeon: 1) identifies complex clinical problems ignored or thought unsolvable by others, 2) becomes an expert, 3) innovates to advance treatment, 4) observes outcomes to further improve and innovate, 5) disseminates knowledge and expertise, 6) asks important questions to further improve care, and 7) trains the next generation of surgeons and scientists.

**Conclusion:** Although alternative pathways to innovation and academic contribution also exist, the academic surgeon typically devotes years of careful observation, analysis, and iterative investigation to identify and solve challenging or unexplored clinical problems, ideally leverages resources available in academic medical centers to support these endeavors.

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The term “academic surgeon” is usually employed to describe a surgeon who is a member of a medical school department of surgery. David Soybel in his Association for Academic Surgery Presidential Address more precisely defined an academic surgeon as “anyone who contributes to the intellectual life of a department or the discipline of surgery in a serious, systematic way.”<sup>1</sup> In some instances, the academic surgeon moniker may be used to describe a surgeon who is actively engaged in the teaching program at a hospital that trains medical students and residents.<sup>2</sup> Faculty engagement in research of one type or another is an additional distinguishing characteristic of academic surgeons.<sup>3</sup>

These definitions accurately reflect some of the various roles and responsibilities of academic surgeons, but they fail to recognize possibly the most distinguishing and important role of the academic surgeon in the greater medical community and society at

large – that of a physician uniquely able to identify new opportunities for improving patient care and develop new cures for human disease. In this regard, the academic surgeon arguably represents one the most impactful and influential of the many professionals engaged in the advancement of medical care, in that the condensed timeline of surgical (vs chronic medical) disease provides an ideal tableau for developing and validating hypotheses regarding means of advancing the diagnosis and treatment of such medical problems.

Many of the members of the faculty of the Michael E. DeBakey Department of Surgery have generated career-long records of academic achievement in their fields. We speculated that an analysis of several of these careers might offer a revealing insight into the unique characteristics of the academic surgeon, and the professional methodologies that the academic surgeon utilizes in his or her efforts to advance medical science.

To systematically investigate these attributes of the academic surgeon, a review was performed of the curriculum vitae and self-descriptive vignettes of lifetime academic achievement obtained

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from seven faculty representing the archetype of the academic surgeon, as defined below. These vignettes are presented as appendices to this report.

**1. Methods**

A review was performed of the curriculum vitae (CVs) and brief, self-descriptive vignettes of the lifetime academic achievement of seven of our faculty with a documented record of attributes that we proposed to define the academic surgeon, including: 1) academic leadership, as evidenced by: a) rank of professor and/or division chief, and b) service in leadership positions in at least 10 national professional organizations; 2) innovation, as evidenced by: a) authorship or co-authorship of at least 150 peer reviewed publications, and b) contribution of at least one “seminal” academic work to the field of surgery, as reflected by at least 500 citations of relevant publication(s) of that work, and 3) dissemination of knowledge to the medical community at large, as evidenced by: a) at least 100 professional and/or scientific presentations, and b) the mentorship, teaching, and training of students and/or protégés. In the interest of conciseness, accrual into this study was limited to seven surgeons meeting these criteria.

*1.1. Demographics and academic leadership*

As determined from CVs solicited from each of the so-defined academic surgeons, the characteristics of these seven (Mary Brandt; Steven Curley; Joseph Coselli, MD; Kenneth Mattox; Joseph Mills; Todd Rosengart; and David Sugarbaker) are remarkably similar (Tables 1 and 2). The average age of the cohort is 63 years (range, 56–78), and six of these seven are male. All members of this group have been in practice for at least 25 years (average, 30; range, 25–44 years). All of them are MDs (none were PhDs); three are double-boarded, and three are triply boarded.

**Table 2**  
Academic surgeon archetype characteristics.

Demographic Information (N = 7)	Mean (range)
Age (years)	63 (56–78)
Gender (male)	6 (86%)
Post-residency fellowship	7 (100%)
Board certifications	2 (1–3)
Years in practice	30 (25–44)
<b>Career Academic Achievements</b>	
<i>Highest professional rank<sup>a</sup></i>	
Chairman	1 (14%)
Chief of staff	1 (14%)
Vice-chair	2 (29%)
Endowed chair	3 (43%)
Associate dean	1 (14%)
Division chief	5 (71%)
Professor	7 (100%)
American Surgical Association membership	7 (100%)
Awards/honors	39 (17–92)
Scientific publications <sup>b</sup>	288 (166–434)
Publications with ≥100 citations	39 (14–73)
Publications with ≥500 citations	6 (1–9)
Book chapters	81 (27–197)
Textbooks	5 (2–9)
Scientific presentations	490 (142–2056)
Grants <sup>c</sup>	24 (4–48)
NIH grants	3 (0–6)
Total lifetime funding	~\$8.8 M (\$0.7 M – \$25 M)
Editorial positions <sup>d</sup>	11 (0–17)
Professional societies	35 (22–72)
Leadership positions	23 (11–43)
Mentees <sup>e</sup>	189 (33–800)
Patents	2 (0–13)
Visiting professorships/keynote/named lectures	35 (13–64)

<sup>a</sup> Each surgeon may hold multiple designations.  
<sup>b</sup> Peer-reviewed and non-peer reviewed articles, excluding textbook chapters.  
<sup>c</sup> Total grants include all grants in which surgeon was principal investigator or co-principal investigator.  
<sup>d</sup> Editorial positions are defined as journal or textbook editorial board position.  
<sup>e</sup> Mentees include dedicated junior faculty, fellows, residents, students, etc. in both clinical and research tracks.

**Table 1**  
Individual Academic surgeon archetype characteristics.

Demographic Information	Surgeon 1	Surgeon 2	Surgeon 3	Surgeon 4	Surgeon 5	Surgeon 6	Surgeon 7
Age (years)	64	56	63	61	78	60	60
Highest rank	Vice-Chair, Division Chief	Chairman, Endowed Chair	Division Chief, Endowed Chair	Division Chief	Chief of Staff	Division Chief, Endowed Chair	Associate Dean, Vice-Chair
Post-residency fellowship	Y	Y	Y	Y	Y	Y	Y
Board certifications	3	2	2	3	2	1	3
Years in practice	32	25	28	29	44	26	26
<b>Academic Achievements</b>							
American Surgical Association	Y	Y	Y	Y	Y	Y	Y
Awards/honors	92	27	17	25	64	21	29
Publications <sup>a</sup>	368	166	308	239	434	313	191
With ≥ 100 citations	42	27	57	18	40	73	14
With ≥ 500 citations	5	2	9	1	2	7	1
Book chapters	103	29	85	64	197	60	27
Textbooks	4	0	3	6	9	3	2
Scientific presentations	209	>200	179	398	2056	142	245
Grants (total) <sup>b</sup>	48	39	15	41	5	4	13
NIH grants	4	6	3	3	0	1	3
Total funding (\$; approximate)	7.25 M	14.1 M	25 M	1.1 M	0.7 M	11.5 M	2.1 M
Editorial positions <sup>c</sup>	16	9	15	7	17	16	0
Professional societies	33	24	37	30	72	28	22
Leadership positions	15	23	24	43	24	16	11
Mentees <sup>d</sup>	>100	33	91	58	>800	181	62
US patents	1	13	7	0	0	0	0
Visiting professorships Keynote/invited lectures	47	18	25	36	39	64	13

<sup>a</sup> Peer-reviewed and non-peer reviewed publications, excluding textbook chapters.  
<sup>b</sup> Total grants include all grants in which surgeon was principal investigator or co-principal investigator.  
<sup>c</sup> Editorial positions defined as journal or textbook editorial board position.  
<sup>d</sup> Mentees include dedicated junior faculty, fellows, residents, students, etc. in both clinical and research.

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